

A low-angle, upward-looking photograph of several modern skyscrapers with glass facades. The sky is a mix of orange, pink, and blue, suggesting a sunset or sunrise. The buildings are dark, with some interior lights visible. The overall mood is dramatic and urban.

ISA chain

Infrastructure Safety Assurance Chain

By
Vimal Suresh

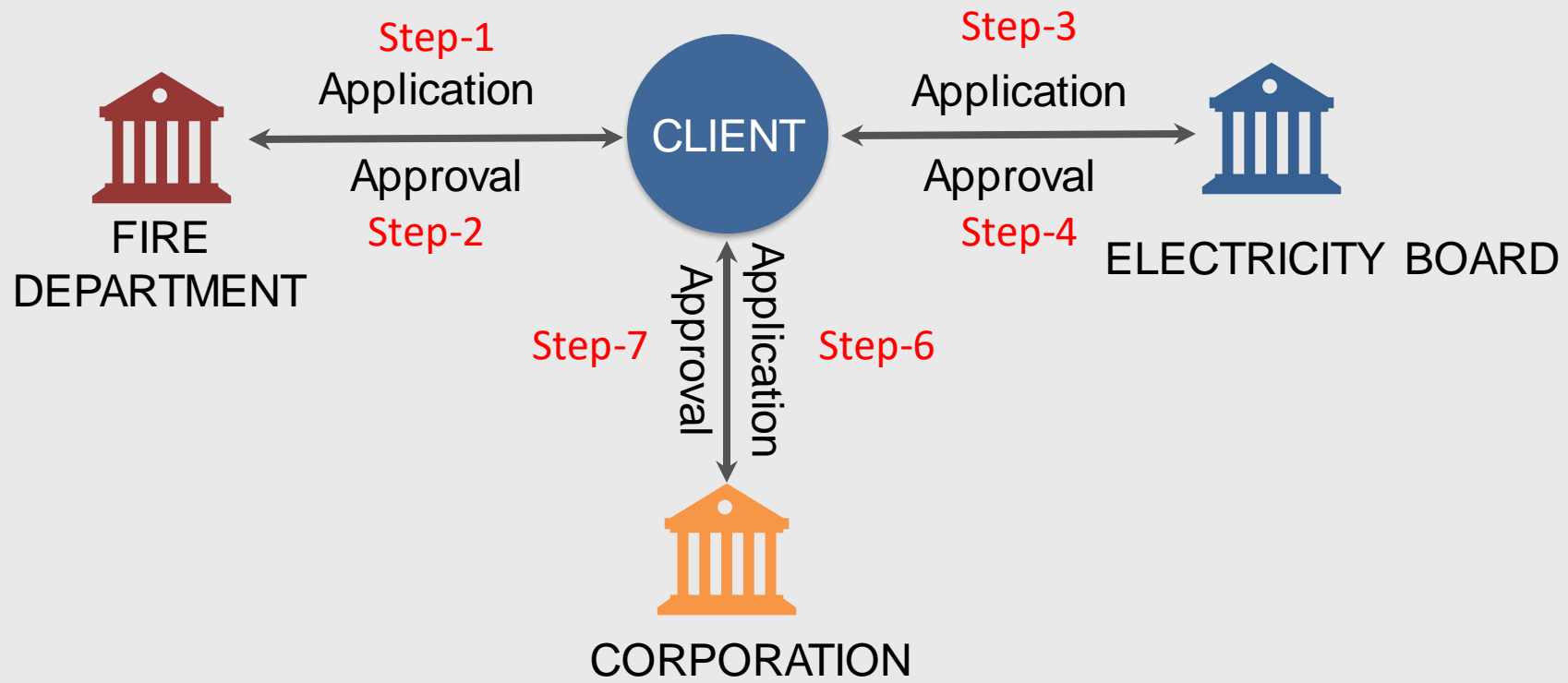
Problem Statement

- In 2018, a total of 13,099 cases of fire accidents were reported in the country. Each year thousands of people die because of low safety measures or unsafe construction of buildings. Even though there are strict regulations and certifications to ensure the safety of the buildings, corruption, Data tampering & lack of coordination between the departments make it ineffective in most cases.

Present State

- In the present scenario the client(the builder) initially submits application for Initial Fire NOC with with building plans and details to start work and after completing the work client submits application for final Fire NOC with as built drawings and details. Each application procedure department conduct inspection and validation.
- After getting final fire NOC clients apply for various department for NOCs like Electricity Board, LPG Department, Pollution Control Board etc.
- After getting all other NOC's clients apply for T.C number from Corporation. Corporation validates all other certification from other departments and issue approval if satisfied.

Present State

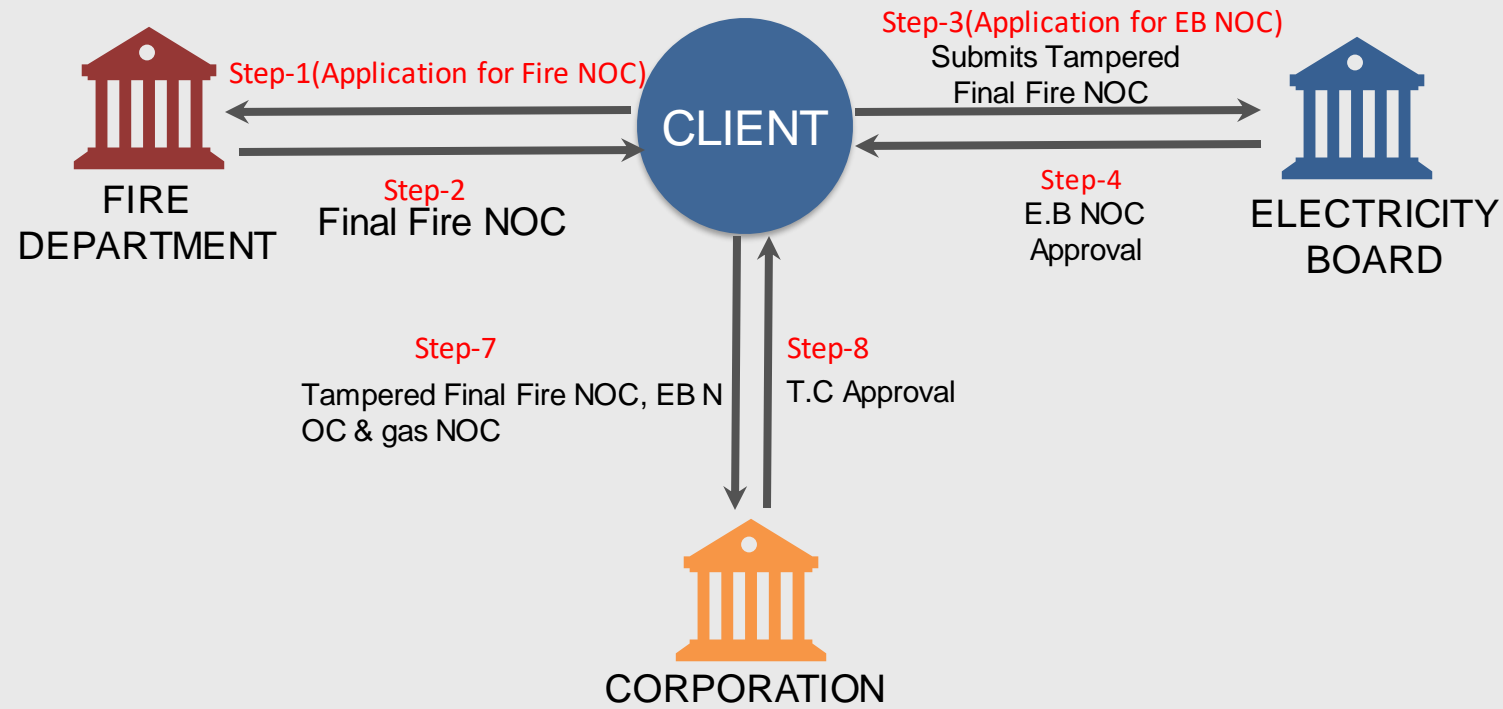


Problem Statement

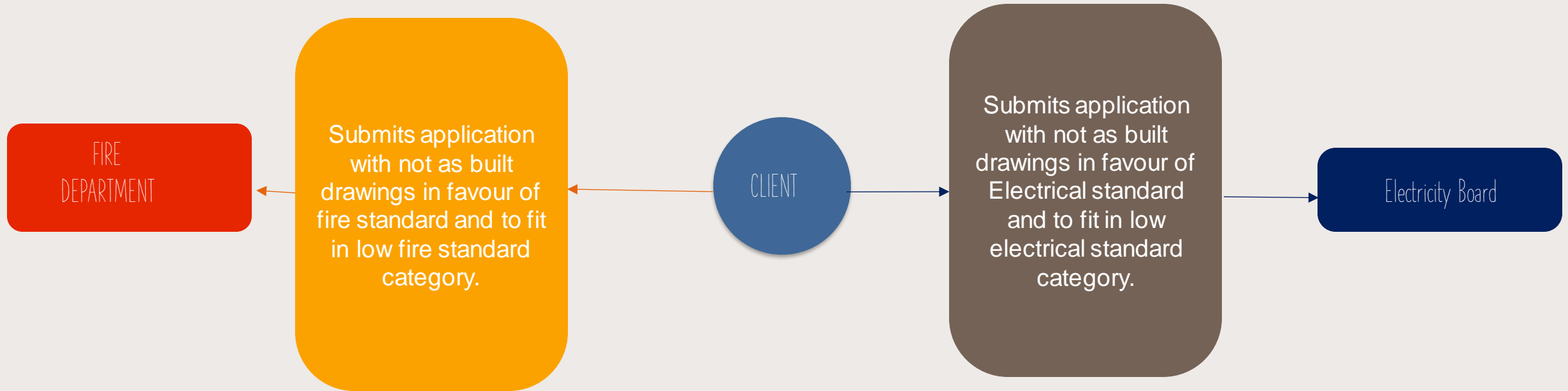
In the present scenerio there is huge opportunity for clients to utilize the system to bluff the authorities with the help of corruption and less transparency. The possibilities are

- 1.By submitting fake Drawings to each department in favour of department regulation.
- 2.By Providing Fake or tampered certification to each department.
- 3.By Providing Fake Building details to each department.
- 4.By corrupting inspection agents.

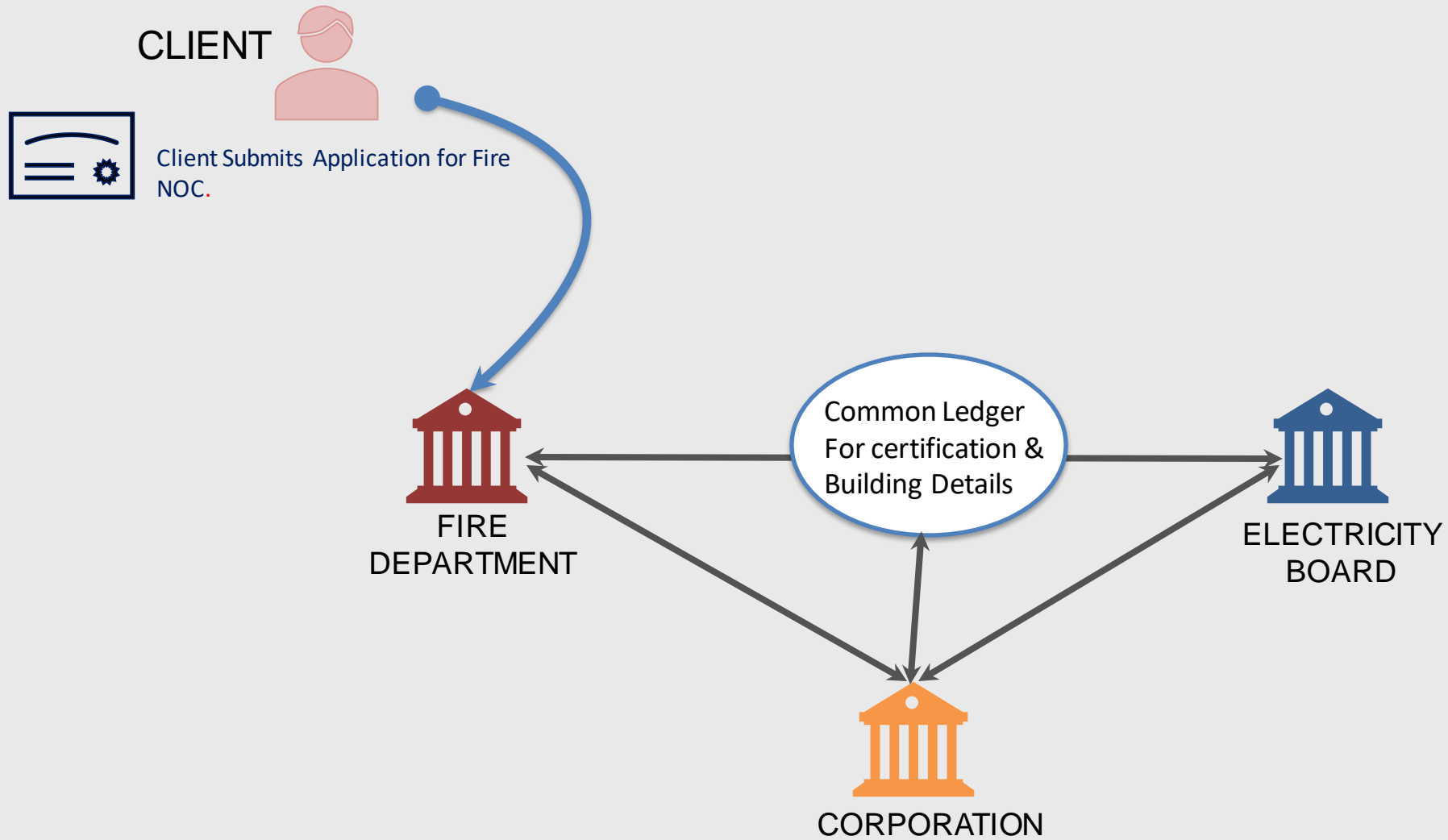
Problem Statement



Problem Statement example



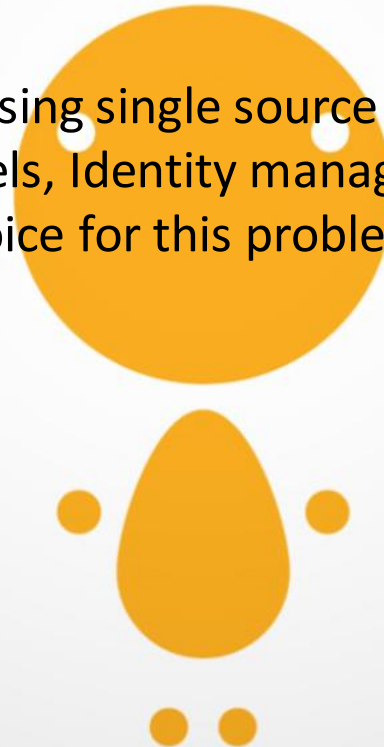
Proposed Solution



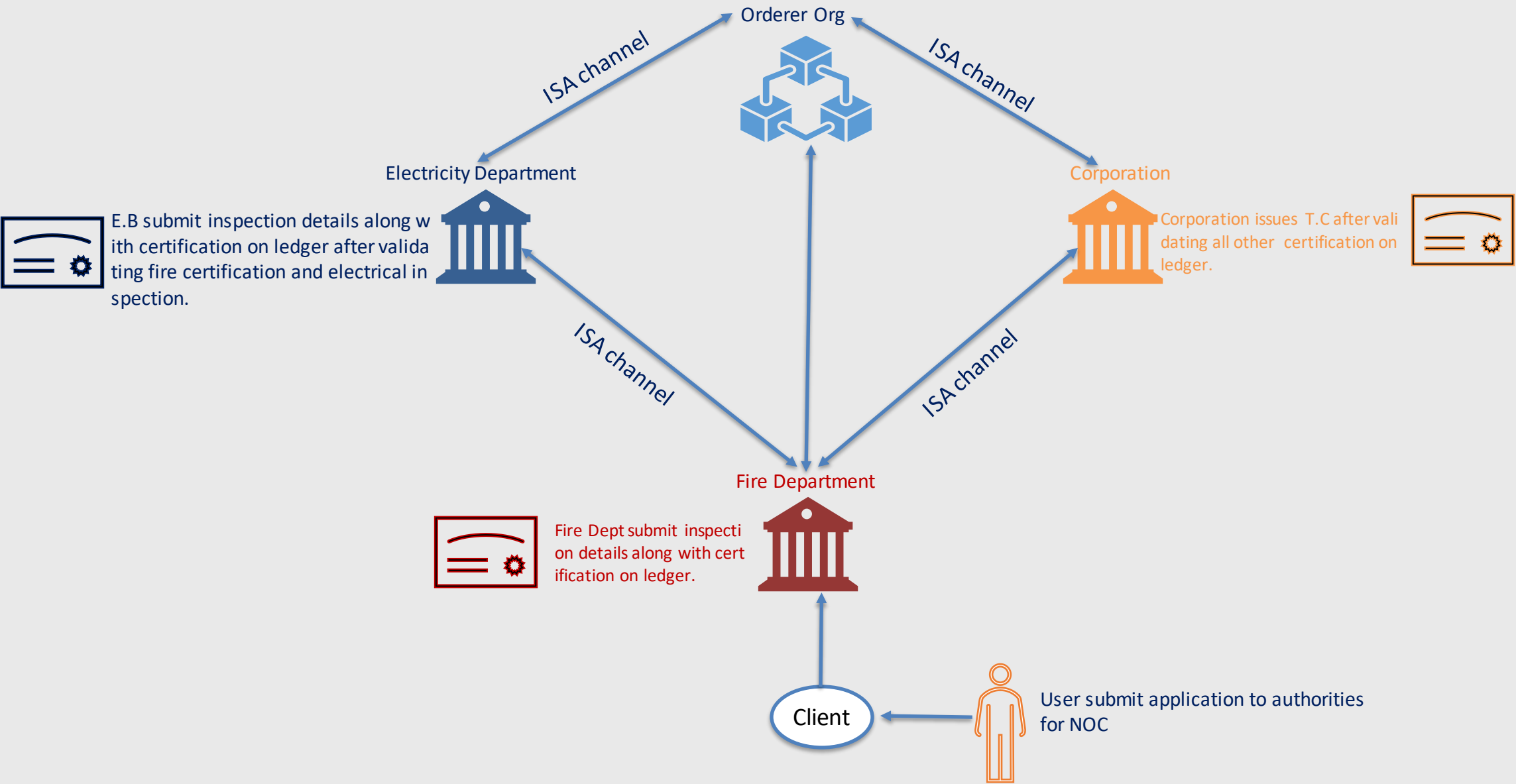
Why Hyperledger Fabric?



The problem statement can be solved using single source of truth ledger & private blockchain is the most effective way to solve this issue. Channels, Identity management and security layer of Hyperledger Fabric makes it perfect choice for this problem statement.



Participants & Assets



TRANSACTIONS

- Inspection Detail Entry of all departments.
- Updation of Inspection Details.
- NOC certificate registration & creation of all departments.
- Validation of safety rating of building

Future Enhancements

In this project to reduce the complexity, we are only including three organization i.e., Fire Department, Electricity Board & Corporation Department but it can be expanded to all departments involving in construction industry which can make the system more powerful and transparency.